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Metal Industry Indicators

Indicators of Domestic Primary Metals, Steel, Aluminum, and Copper Activity

February 2000

The primary metals leading index points to modest growth in domestic metals activity in the coming months. Although growth in the metals price leading index has been rather weak in recent months, the index component that forecasts the global economy has been stronger, suggesting the possibility of near-term increases for some metal prices. However, inventories of metal products still remain at relatively high levels, which may hold down price increases.

The **primary metals leading index** advanced 0.5% in January, moving up to 129.6 from a revised 128.9 in December. The index's 6-month smoothed growth rate, a compound annual rate that measures the near-term trend, also picked up a bit to 2.0% from a revised 1.4% in December. A growth rate above +1.0% usually signals an upward near-term trend for metals activity.

As is normally the case, only four of the index's eight components were available to compute the most recent month's index, so the January index value should be considered preliminary. Two index components, the S&P stock price index for diversified machinery companies and the growth rate of the metals price index, moved higher. Meanwhile, the Purchasing Managers' Index dipped slightly, and the length of the average workweek in primary metals establishments was unchanged. The latest primary metals leading index points to modest near-term growth in U.S. primary metals activity.

The **steel leading index** was flat in December, unchanged from November's revised 112.9, and its 6-month smoothed growth rate slowed to 2.1% from a revised 2.5% in November. The strongest positive contributions came from the growth rate of the price of steel scrap and the S&P stock price index for steel companies, while the largest negative contributions were from the inflation-adjusted new orders for steel mill products and shipments of household appliances. Although the growth rate of the steel leading index has slowed since last summer, it remains in the range above +1.0% that signals continued growth in domestic steel industry activity in the near future.

The **aluminum mill products leading index** increased 1.3% in December to 157.3 from a revised 155.3 in November, and its 6-month smoothed growth rate climbed to 0.8% from a revised -1.4% in November. Most of the December increase is attributable to one component, the length of the average workweek in aluminum sheet, plate, and foil establishments, which increased 1.7 hours, the largest increase in over 4 years. The growth rate of this leading index has generally been slowing since last June, suggesting that growth in the U.S. aluminum mill products industry may slow in the near future.

The **primary aluminum leading index** advanced 0.5% in December to 92.6 from a revised 92.1 in November, and its 6-month smoothed growth rate increased to 4.0% from a revised 3.4% in November. A large negative contribution from the length of the average workweek in primary aluminum establishments was offset by positive contributions from other leading indicators. The S&P stock price index for aluminum companies made the largest positive contribution, while the spot price of aluminum on the London Metal Exchange also posted a strong gain. The contributions from other components were smaller and mixed between positive and negative. The growth rate of the primary aluminum leading index points to moderate growth in the domestic primary aluminum industry in early 2000. (Tables and charts for the primary aluminum indexes are in a separate file.)

The **copper leading index** declined for the fifth straight month in December, down 0.5% to 129.5 from a revised 130.2 in November. Meanwhile, the index's 6-month smoothed growth rate slipped to -2.1% from a revised -1.0% in November. However, without the very large negative contribution from the S&P stock price index for building materials companies, the copper leading index would have actually increased about 0.4% in December, and would have decreased only 0.8% since last July instead of the 2.9% that it has fallen. This stock price index has declined because of factors that do not have a direct bearing on copper activity, making the near-term industry outlook appear overly pessimistic. Still, the growth rates of the copper leading and coincident indexes hold little promise of an increase in domestic copper activity in the coming months.

OECD Leading Index Component Boosts Metals Price Leading Index

The **metals price leading index** advanced 0.7% in December, the latest month for which it is available, moving up to 97.6 from a revised 96.9 in November. The index's 6-month

smoothed growth rate rose to -0.7% from -2.2% in November. As in November, the driving force behind the index increase was a strong gain in the 6-month smoothed growth rate of the OECD Total Leading Index. December marked the largest increase in this component since January 1999. Two other components, the growth rates of the inflation-adjusted value of U.S. M2 money supply and building permits for new U.S. housing units also moved higher, while the inflation-adjusted value of new orders for U.S. nonferrous metals moved lower.

The 6-month smoothed growth rate of the inflation-adjusted value of U.S. nonferrous metal products inventories, which is a measure of growth in the supply of metals, was unchanged in December from a revised -4.9% in November. This indicator has an inverse relationship with metal prices. When the inventory growth rate became negative, metal prices were more likely to rise. Although the actual level of these inventories dipped a bit in December, they still remain relatively high.

The growth in the global economy anticipated by the OECD leading index suggests that overall metals prices may increase in the coming months. Recently, the OECD index has been our best performing indicator of metals prices. The business cycle and inventories are only two factors in metals price determination. Other factors that affect prices include changes in metals production, speculation, foreign exchange rates, strategic stockpiling, political instability, and production costs.

GROWTH RATE SNAPSHOT

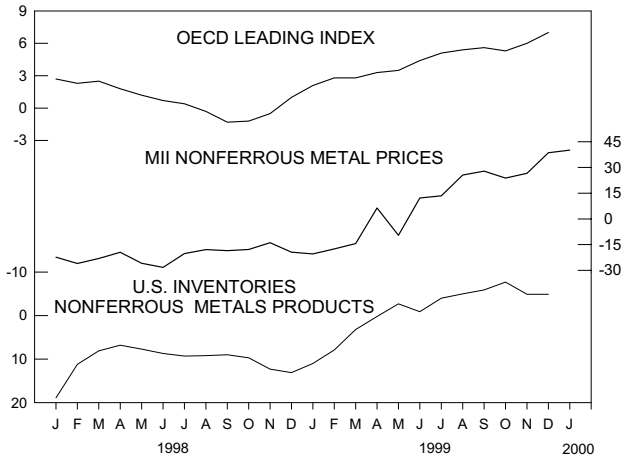


Table 1.
Leading Index of Metal Prices and Growth Rates of the Nonferrous Metals Price Index, Inventories of Nonferrous Metal Products, and Selected Metal Prices

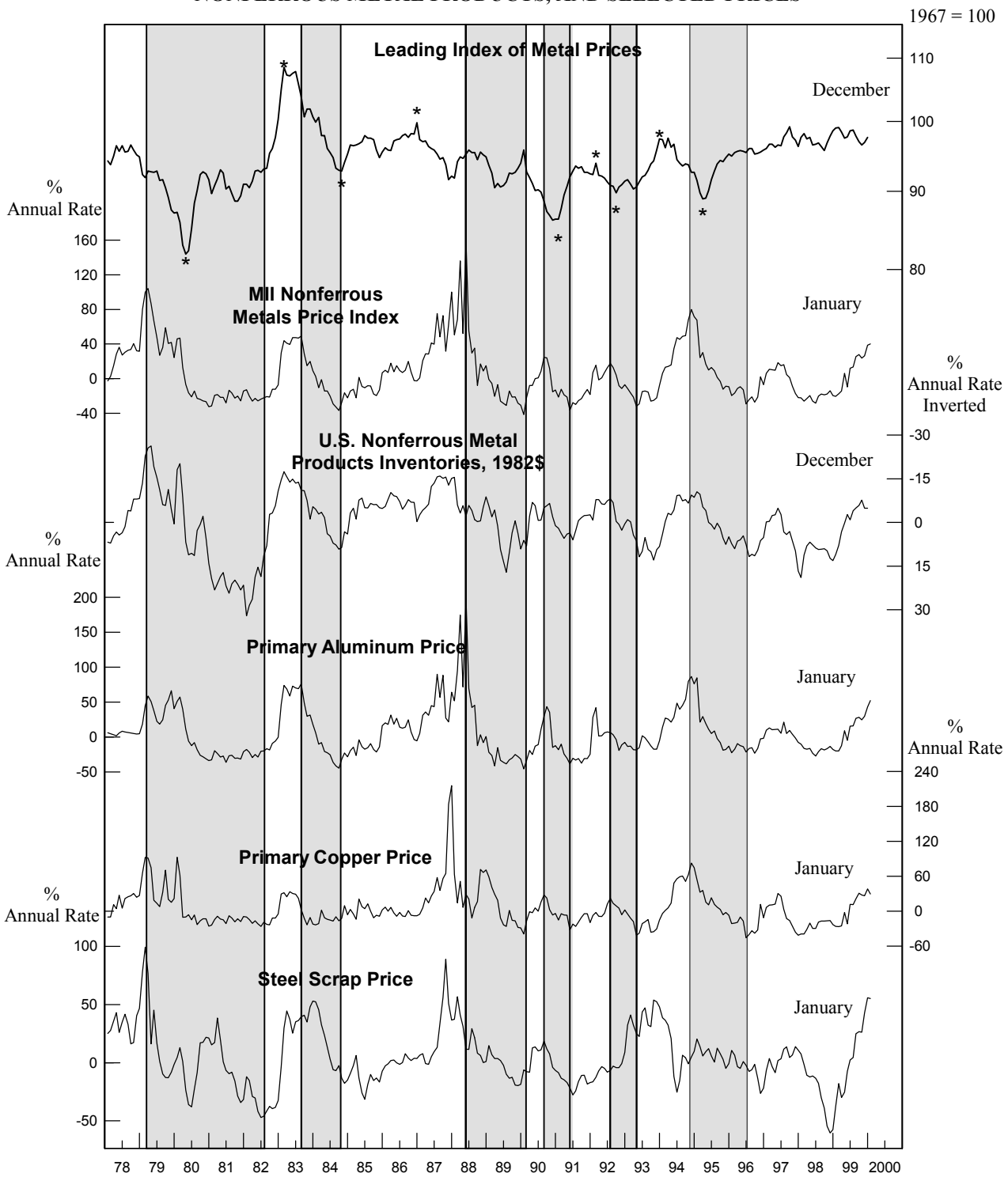
		Six-Month Smoothed Growth Rates				
	Leading Index of Metal Prices (1967=100)	MII Nonferrous Metals Price Index	U.S. Nonferrous Metal Products Inventories (1982$)	Primary Aluminum	Primary Copper	Steel Scrap
1998						
December	98.6r	-19.4	13.1	-18.0	-23.0	-57.4
1999						
January	99.0r	-20.4	11.0	-20.2	-26.0	-37.5
February	99.1	-17.5	7.9	-20.2	-26.4	-17.8
March	98.4r	-14.4	3.2	-12.6	-25.1	-29.8
April	97.5	6.4	0.2	8.8	-1.7	-25.3
May	97.7r	-9.6	-2.7	-4.9	-21.7	-7.6
June	98.6r	12.2	-0.9	15.3	11.7	2.2
July	98.7r	13.5	-4.0	15.8	11.4	4.4
August	97.8r	25.6	-5.0	26.7	21.7	24.9
September	97.0r	27.9	-5.9	28.0	31.0	26.6
October	96.5r	23.8	-7.7	24.4	28.0	26.2
November	96.9r	26.6	-4.9r	29.4	26.5	42.7
December	97.6	38.6	-4.9	42.7	38.3	55.8
2000						
January	NA	40.1	NA	52.1	29.7	55.2

NA: Not available *r: Revised*

Note: The components of the Leading Index of Metal Prices are the 6-month smoothed growth rates of the following: 1, the deflated value of new orders for nonferrous metals; 2, the OECD leading index, total; 3, the index of new private housing units authorized; and 4, the deflated value of U.S. M2 money supply. The Metal Industry Indicators (MII) Nonferrous Metals Price Index measures changes in end-of-the-month prices for primary aluminum, copper, lead, and zinc traded on the London Metal Exchange (LME). The steel scrap price used is the price of No. 1 heavy melting. Inventories consist of the deflated value of finished goods, work in progress, and raw materials for U.S.-produced nonferrous metals and nonferrous metal products. Six-month smoothed growth rates are based on the ratio of the current month's index or price to its average over the preceding 12 months, expressed at a compound annual rate.

Sources: U.S. Geological Survey (USGS); American Metal Market (AMM); the London Metal Exchange (LME); the Bureau of the Census; and the Organization for Economic Cooperation and Development (OECD).

CHART 1.
LEADING INDEX OF METAL PRICES AND GROWTH RATES OF NONFERROUS METALS PRICE INDEX, INVENTORIES OF NONFERROUS METAL PRODUCTS, AND SELECTED PRICES



Shaded areas are downturns in the nonferrous metals price index growth rate. Asterisks (*) are peaks and troughs in the economic activity reflected by the leading index of metal prices. Scale for nonferrous metal products inventories is inverted.

U.S. Geological Survey, February 2000

Table 2.
The Primary Metals Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
1999				
February	126.3r	-0.6r	110.1	-2.0
March	126.8r	0.6r	111.4r	0.6
April	127.5r	1.9	111.0	0.1
May	128.8r	4.0	111.5r	1.2
June	129.6r	5.0	112.2	2.3
July	129.4r	4.4r	113.1r	3.8
August	129.6	4.2r	113.4	3.8
September	128.6	2.3	113.2	3.2
October	128.5r	1.6	112.7r	2.1r
November	128.8r	1.6r	113.8r	3.7r
December	128.9r	1.4r	114.1	3.5
2000				
January	129.6	2.0	NA	NA

NA: *Not available* ***r:*** *Revised*

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 3.
The Contribution of Each Primary Metals Index Component to the Percent Change in the Index from the Previous Month

Leading Index	**December**	**January**
1. Average weekly hours, primary metals (SIC 33)	0.1r	0.0
2. S&P stock price index, machinery, diversified	-0.2r	0.4
3. Ratio of price to unit labor cost (SIC 33)	0.0	NA
4. Metals price index growth rate	0.1	0.2
5. New orders, primary metals, (SIC 33) 1982$	-0.1	NA
6. Index of new private housing units authorized by permit	0.0	NA
7. Growth rate of U.S. M2 money supply, 1992$	0.1	NA
8. Purchasing Managers' Index	0.0r	-0.1
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.0	0.5

Coincident Index	**November**	**December**
1. Industrial production index, primary metals (SIC 33)	0.4	0.0
2. Total employee hours, primary metals (SIC 33)	0.1	0.2
3. Value of shipments, primary metals, (SIC 33) 1982$	0.4	-0.1
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	1.0	0.2

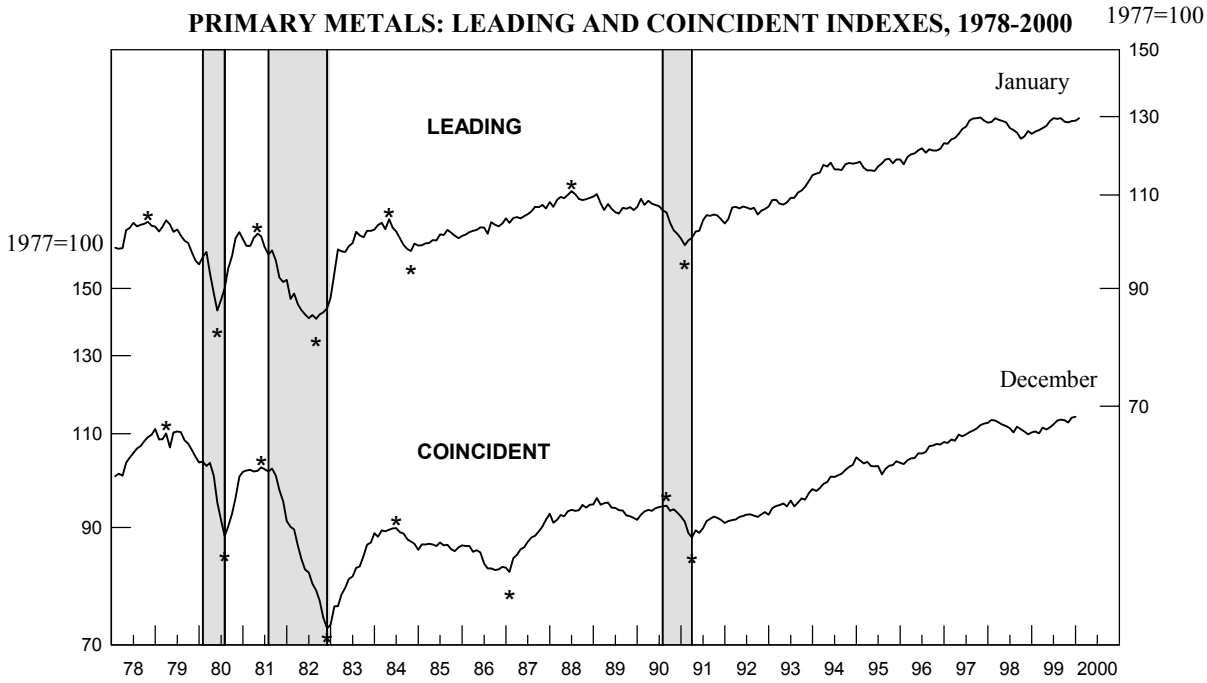
Sources: Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's; 3, Center for International Business Cycle Research, Bureau of Labor Statistics, and Federal Reserve Board; 4, Computed by the USGS from individual monthly metals prices from the Journal of Commerce; 5, Bureau of the Census and U.S. Geological Survey; 6, Bureau of the Census and U.S. Geological Survey; 7, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 8, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey; 3, Bureau of the Census and U.S. Geological Survey. All series are seasonally adjusted, except 2, 3, and 4 of the leading index.

NA*: Not available* ***r:*** *Revised*

Note: A component's contribution, shown in Tables 3, 5, 7, and 9, measures its effect, in percentage points, on the percent change in the index. Each month, the sum of the contributions plus the trend adjustment equals (except for rounding differences) the index's percent change from the previous month.

CHART 2.

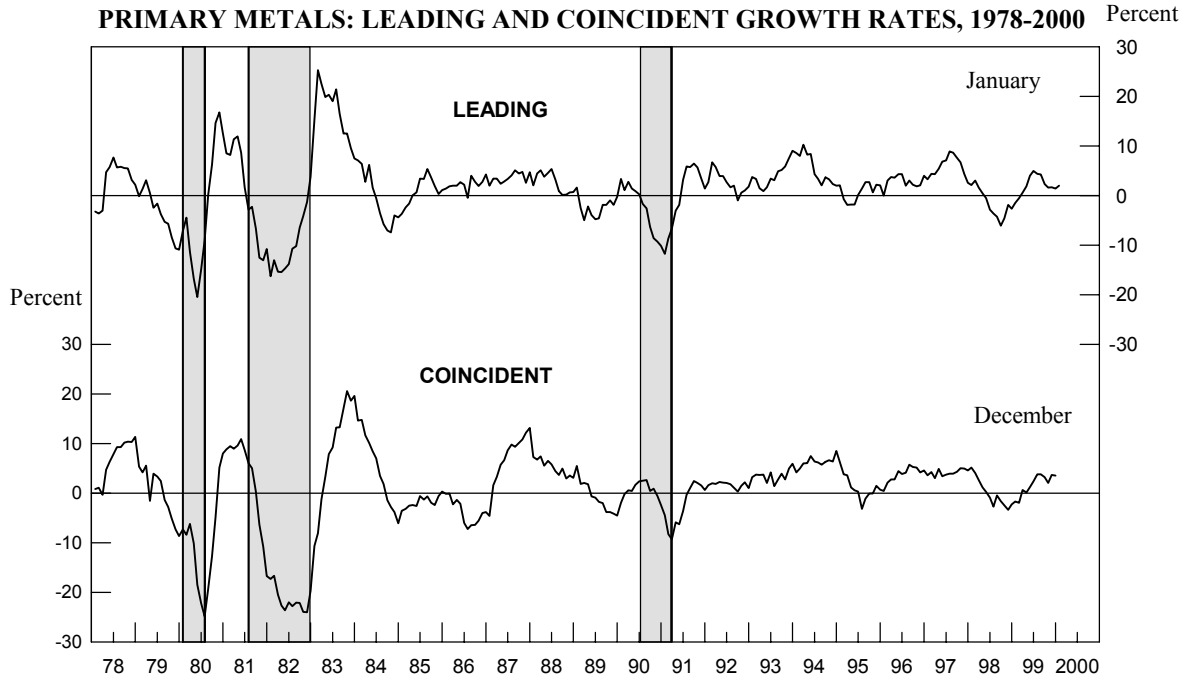
PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1978-2000



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 3.

PRIMARY METALS: LEADING AND COINCIDENT GROWTH RATES, 1978-2000



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

U.S. Geological Survey, February 2000

Table 4.
The Steel Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
1999				
January	110.0r	0.6	97.2	-3.6
February	111.8r	3.9	97.4	-2.7
March	110.6r	1.8r	98.4r	-0.3
April	111.5	3.6	98.6	0.6
May	112.6r	5.3r	99.2r	1.9r
June	113.1r	6.0	99.6	2.8
July	112.9r	5.1r	100.3r	4.1
August	113.3r	5.0r	101.1r	5.5r
September	111.3r	1.0	101.0r	4.9r
October	111.8r	1.2r	101.1r	4.5r
November	112.9r	2.5r	102.1r	6.0r
December	112.9	2.1	102.1	5.1

r: *Revised*

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 5.
The Contribution of Each Steel Index Component to the Percent Change in the Index from the Previous Month

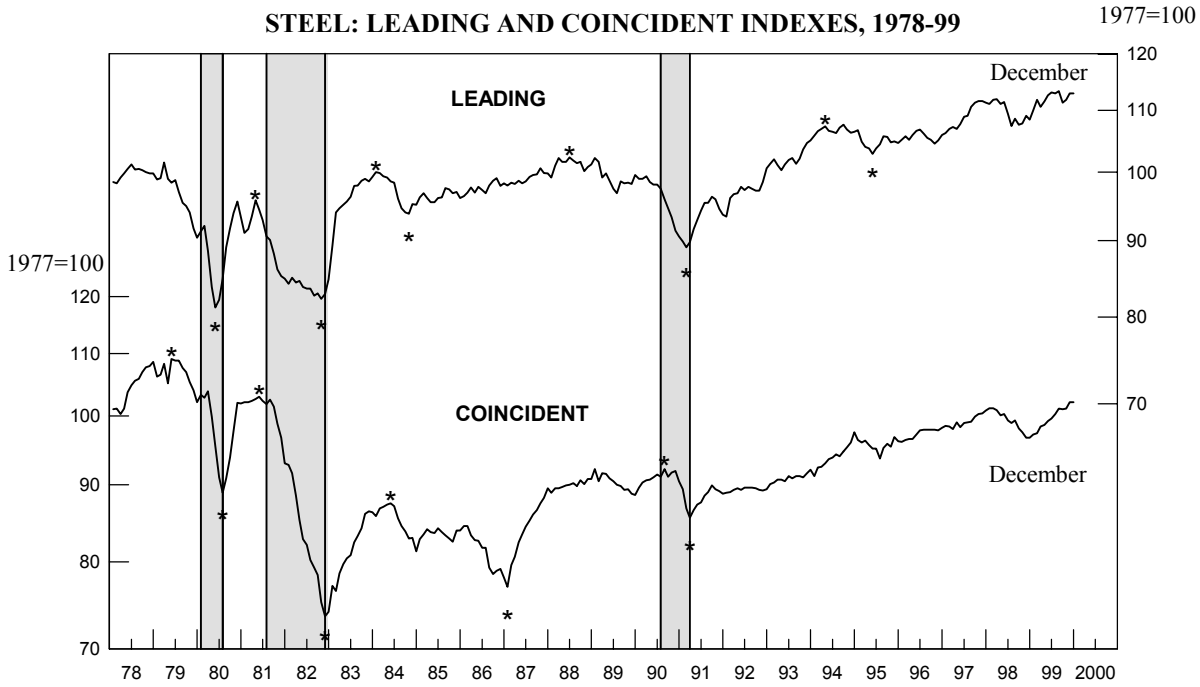
Leading Index	**November**	**December**
1. Average weekly hours, blast furnaces and basic steel products (SIC 331)	0.2r	0.1
2. New orders, steel works, blast furnaces, and rolling and finishing mills, 1982$, (SIC 331)	0.2	-0.4
3. Shipments of household appliances, 1982$	0.3	-0.2
4. S&P stock price index, steel companies	0.1	0.2
5. Industrial production index for automotive products	-0.1	-0.1
6. Growth rate of the price of steel scrap (#1 heavy melting, $/ton)	0.3	0.3
7. Index of new private housing units authorized by permit	0.1	0.0
8. Growth rate of U.S. M2 money supply, 1992$	0.0r	0.1
9. Purchasing Managers' Index	0.0	0.0
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	1.1r	0.0
Coincident Index		
1. Industrial production index, basic steel and mill products (SIC 331)	0.7	0.0
2. Value of shipments, steel works, blast furnaces, and rolling and finishing mills (SIC 331), 1982$	0.3r	-0.2
3. Total employee hours, blast furnaces and basic steel products (SIC 331)	0.0r	0.1
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	1.1r	0.0

Sources: Leading: 1, Bureau of Labor Statistics; 2, Bureau of the Census and U.S. Geological Survey; 3, Bureau of the Census and U.S. Geological Survey; 4, Standard & Poor's; 5, Federal Reserve Board; 6, Journal of Commerce and U.S. Geological Survey; 7, Bureau of the Census and U.S. Geological Survey; 8, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 9, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, Bureau of the Census and U.S. Geological Survey; 3, Bureau of Labor Statistics and U.S. Geological Survey. All series are seasonally adjusted, except 4 and 6 of the leading index.

r*: Revised*

CHART 4.

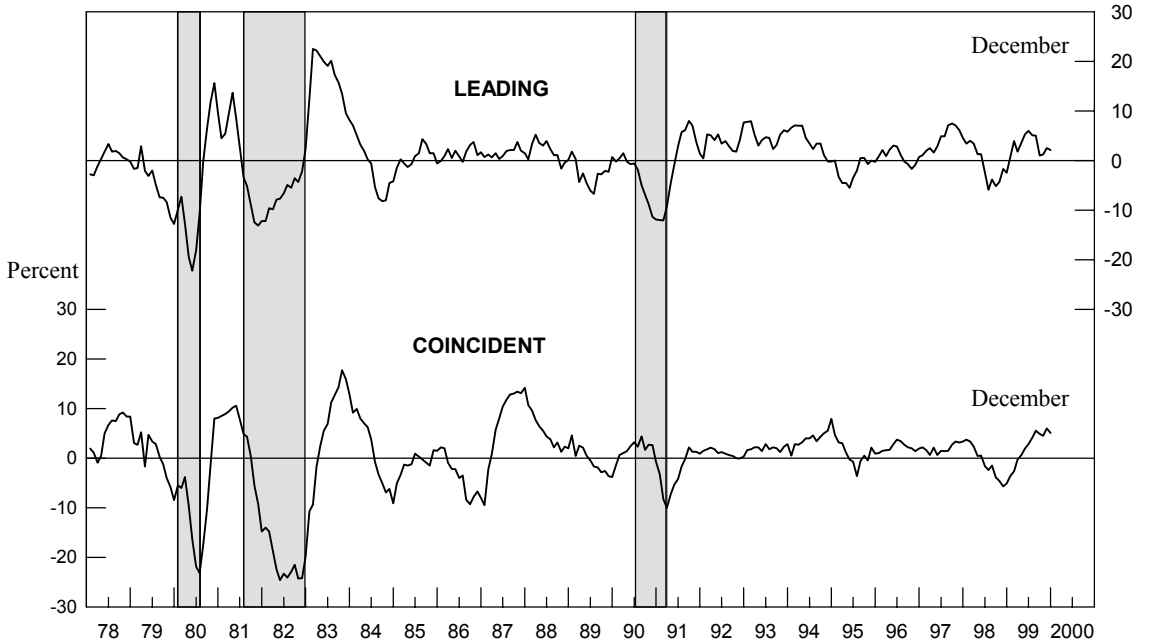
STEEL: LEADING AND COINCIDENT INDEXES, 1978-99



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 5.

STEEL: LEADING AND COINCIDENT GROWTH RATES, 1978-99



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

U.S. Geological Survey, February 2000

Table 6.
The Aluminum Mill Products Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
1999				
January	155.4r	2.2r	139.4r	-2.0
February	154.8r	1.4	137.6r	-4.0
March	156.4r	3.2	140.6r	0.4
April	156.2r	2.7r	140.7r	0.5
May	157.8r	4.3r	141.4r	1.5
June	159.3r	5.6	142.3r	2.6
July	159.0r	4.4r	141.6r	1.5
August	158.2	2.6r	143.7r	4.5
September	157.7r	1.7r	142.7r	3.0r
October	155.4	-1.2r	142.5r	2.6r
November	155.3r	-1.4r	141.9r	1.4r
December	157.3	0.8	143.3	2.7

r: *Revised*

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

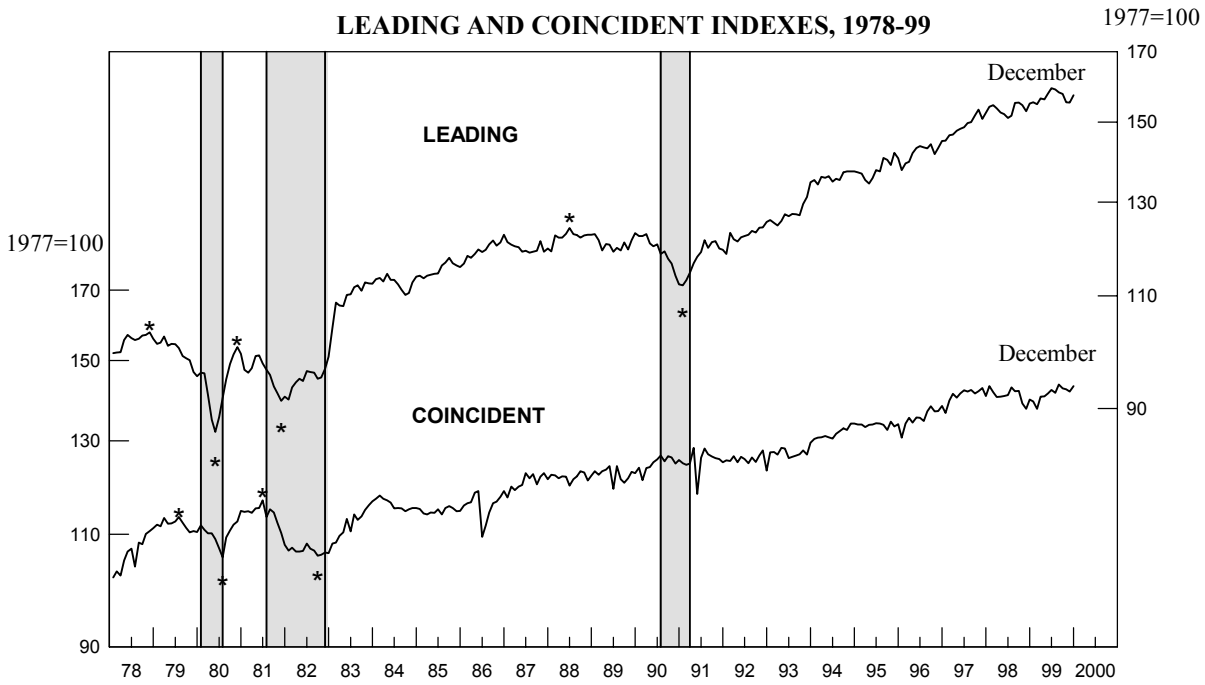
Table 7.
The Contribution of Each Aluminum Mill Products Index Component to the Percent Change in the Index from the Previous Month

Leading Index	**November**	**December**
1. Average weekly hours, aluminum sheet, plate, and foil (SIC 3353)	-0.4r	1.0
2. Index of new private housing units authorized by permit	0.1	0.0
3. Industrial production index for automotive products	-0.1r	-0.2
4. Construction contracts, commercial and industrial (square feet)	-0.2	0.1
5. Net new orders for aluminum mill products (pounds)	0.3r	0.1
6. Growth rate of U.S. M2 money supply, 1992$	0.0r	0.1
7. Purchasing Managers' Index	0.0r	0.0
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.2r	1.2
Coincident Index		
1. Industrial production index, aluminum sheet, plate, and foil (SIC 3353)	-0.2	0.0
2. Total employee hours, aluminum sheet, plate, and foil (SIC 3353)	-0.4r	0.8
Trend adjustment	0.2	0.2
Percent change (except for rounding differences)	-0.4r	1.0

Sources: Leading: 1, Bureau of Labor Statistics; 2, Bureau of the Census and U.S. Geological Survey; 3, Federal Reserve Board; 4, F.W. Dodge, Division of McGraw-Hill Information Systems Company; 5, The Aluminum Association, Inc. and U.S. Geological Survey; 6, Federal Reserve Board, Conference Board, and U.S. Geological Survey; 7, National Association of Purchasing Management. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey. All series are seasonally adjusted.

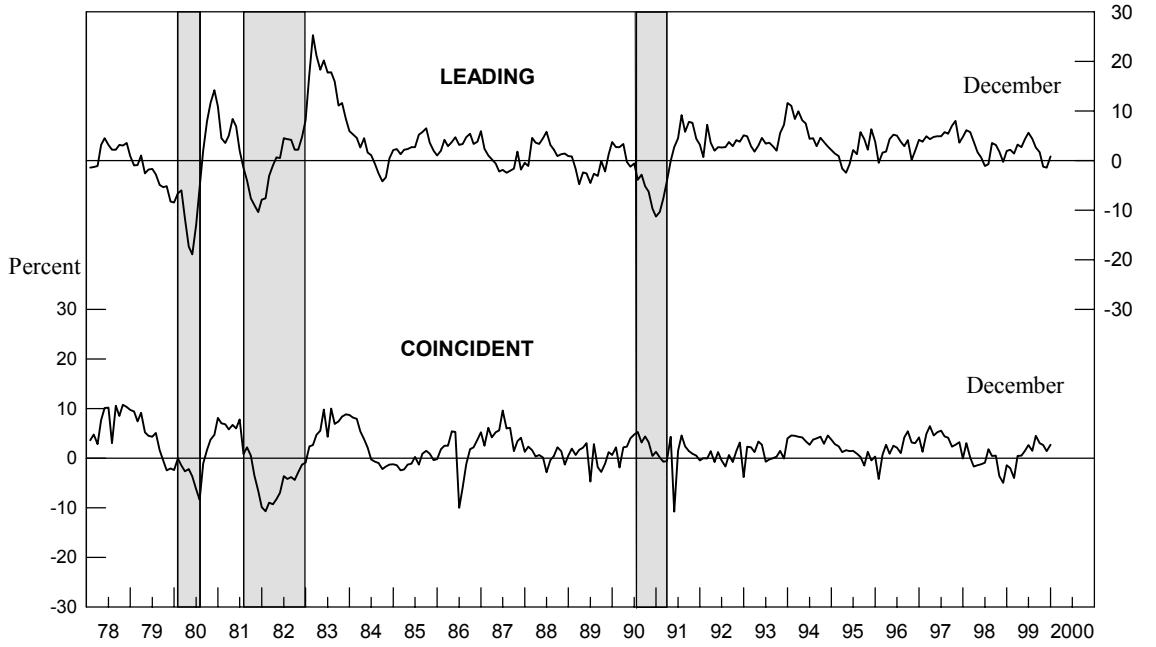
r: *Revised*

CHART 6.
ALUMINUM MILL PRODUCTS:
LEADING AND COINCIDENT INDEXES, 1978-99



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 7.
ALUMINUM MILL PRODUCTS:
LEADING AND COINCIDENT GROWTH RATES, 1978-99



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

U.S. Geological Survey, February 2000

Table 8.
The Copper Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
1999				
January	130.6	4.1	123.8	-1.9
February	129.3	1.5	124.3	-1.0
March	128.6	0.2	125.4	0.8
April	130.3	2.6	124.8	-0.2
May	130.4	2.4	123.4	-2.4
June	132.4	4.9	122.8	-3.1
July	133.3	5.6	123.0	-2.6
August	132.7	4.2	122.8	-2.6
September	132.2	2.9	121.6r	-4.0
October	131.2	0.9	122.1	-2.9
November	130.2r	-1.0r	121.6r	-3.2r
December	129.5	-2.1	122.3	-1.7

r: *Revised*

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

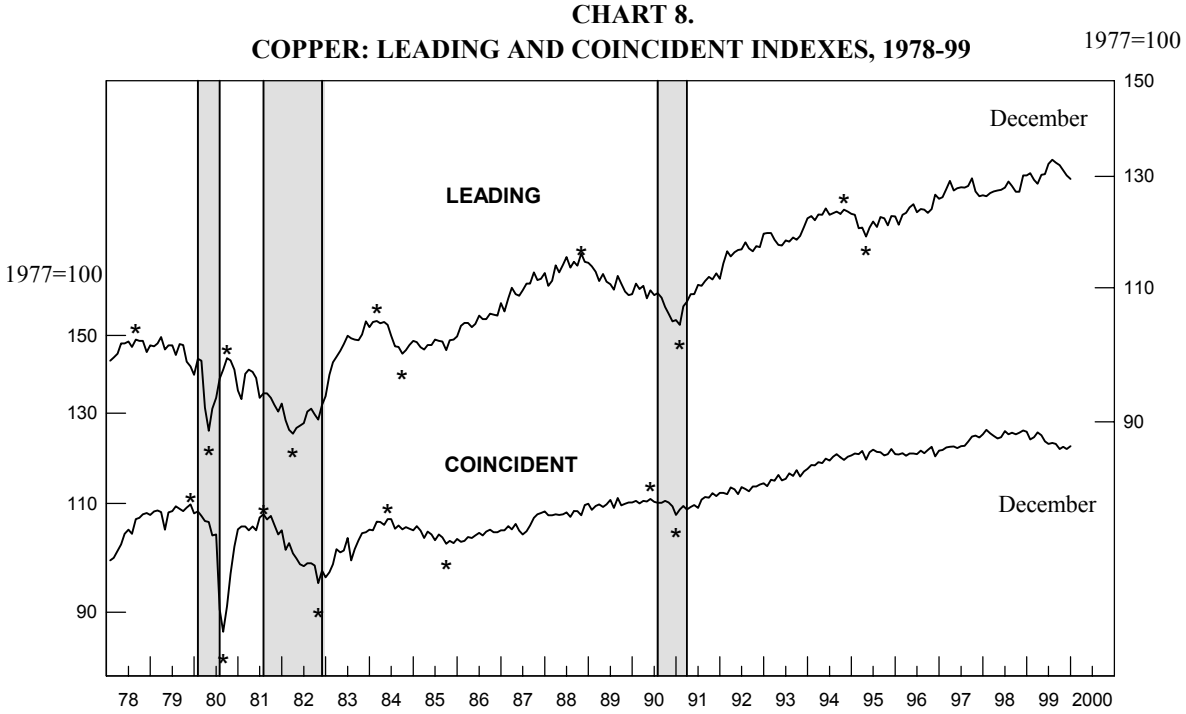
Table 9.
The Contribution of Each Copper Index Component to the Percent Change in the Index from the Previous Month

Leading Index	**November**	**December**
1. Average weekly overtime hours, rolling, drawing, and extruding of copper (SIC 3351)	-0.4r	0.1
2. New orders, nonferrous and other primary metals, 1982$	0.0r	0.0
3. S&P stock price index, building materials companies	-0.3	-1.0
4. Ratio of shipments to inventories, electronic and other electrical equipment (SIC 36)	0.2	-0.3
5. LME spot price of primary copper	0.0	0.3
6. Index of new private housing units authorized by permit	0.1	0.0
7. Spread between the U.S. 10-year Treasury Note and the Federal Funds rate	-0.2	0.3
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	-0.6r	-0.6
Coincident Index		
1. Industrial production index, primary smelting and refining of copper (SIC 3331)	-0.1	-0.5
2. Total employee hours, rolling, drawing, and extruding of copper (SIC 3351)	-0.3r	0.9
3. Copper refiners' shipments (short tons)	0.0	0.0
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	-0.3r	0.5

Sources: Leading: 1, Bureau of Labor Statistics; 2, Bureau of the Census and U.S. Geological Survey; 3, Standard & Poor's; 4, Bureau of the Census and U.S. Geological Survey; 5, London Metal Exchange; 6, Bureau of the Census and U.S. Geological Survey; 7, Federal Reserve Board and U.S. Geological Survey. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics; 3, American Bureau of Metal Statistics, Inc. and U.S. Geological Survey. All series are seasonally adjusted, except 3, 5, and 7 of the leading index.

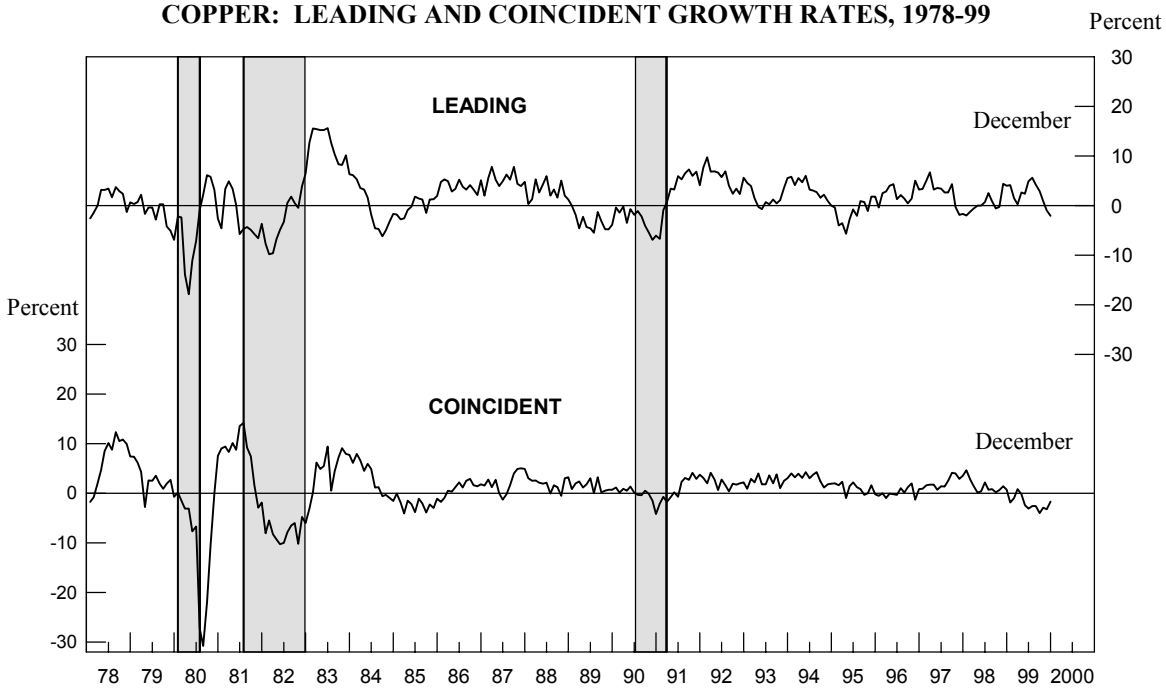
r: *Revised*

CHART 8.
COPPER: LEADING AND COINCIDENT INDEXES, 1978-99



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 9.
COPPER: LEADING AND COINCIDENT GROWTH RATES, 1978-99



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

Explanation

Each month, the U.S. Geological Survey tracks the effects of the business cycle on five U.S. metal industries by calculating and publishing composite indexes of leading and coincident indicators. Wesley Mitchell and Arthur Burns originated the cyclical-indicators approach for the economy as a whole at the National Bureau of Economic Research in the mid-1930's. Over subsequent decades this approach was developed and refined, mostly at the National Bureau, under the leadership of Geoffrey H. Moore.[1]

A business cycle can briefly be described as growth in the level of economic activity followed by a decline succeeded by further growth. These alternating periods of growth and decline do not occur at regular intervals. Composite indexes, however, can help determine when highs and lows in the cycle might occur. A composite index combines cyclical indicators of diverse economic activity into one index, giving decision makers and economists a single measure of how changes in the business cycle are affecting economic activity.

The indicators in the metal industry leading indexes historically give signals several months in advance of major changes in a coincident index, a measure of current metal industry activity. Indicators that make up the leading indexes are, for the most part, measures of anticipations or new commitments to various economic activities that can affect the metal industries in the months ahead.

Composite coincident indexes for the metal industries consist of indicators for production, shipments, and total employee hours worked. As such, the coincident indexes can be regarded as measures of the economic health of the metal industries.

Four of the metal industry coincident indexes, those for primary metals, steel, primary aluminum, and aluminum mill products, reflect their classifications in the U.S. Standard Industrial Classification (SIC). The SIC is the main classification used by the United States government and industry in collecting and tabulating economic statistics. The coincident index for copper is a blend of two different copper industries, primary smelting and refining of copper and rolling, drawing, and extruding of copper.

Of the five metal industries, primary metals is the broadest, consisting of twenty-six different metal processing industries. The steel, aluminum, and copper industries are parts of the primary metals industry.

The metal industry leading indexes turn before their respective coincident indexes an average of 9 months for primary metals and 8 months for steel and copper. The average lead time for the primary aluminum leading index is 6 to 8 months, and the average lead time for the aluminum mill products leading index is 6 months.

The leading index of metal prices, also published in the *Metal Industry Indicators*, is designed to signal changes in a composite index of prices for primary aluminum, copper, lead, and zinc traded on the London Metal Exchange. On average, this leading index indicates significant changes in price growth about 7 months in advance.

The growth rate used in the *Metal Industry Indicators* is a 6-month smoothed growth rate at a compound annual rate, calculated from a moving average. Moving averages smooth fluctuations in data over time so that trends can be observed. The 6-month smoothed growth rate is based upon the ratio of the latest monthly value to the preceding 12-month moving average.

$$\left[\left(\frac{\text{current value}}{\text{preceding 12-month moving average}}\right)^{\frac{12}{6.5}} - 1.0\right] * 100$$

Because the interval between midpoints of the current month and the preceding 12 months is 6.5 months, the ratio is raised to the 12/6.5 power to derive a compound annual rate.

The growth rates measure the near-term industry trends. They, along with other information about the metal industries and the world economy, are the main tools used to determine the outlook of the industries. A 6-month smoothed growth rate above +1.0% usually means increasing growth; a rate below -1.0% usually means declining growth.

The next summary is scheduled for release on MINES FaxBack at 10:00 a.m. EST, Friday, March 17. Access MINES FaxBack from a touch-tone telephone attached to a fax machine by dialing 703-648-4999. The address for *Metal Industry Indicators* on the World Wide Web is: http://minerals.usgs.gov/minerals/pubs/mii/

The ***Metal Industry Indicators*** report is produced at the U.S. Geological Survey by the Minerals Information Team. The report is prepared by Kenneth Beckman (703-648-4916), e-mail (kbeckman@usgs.gov), and Gail James (703-648-4915), e-mail (gjames@usgs.gov). The Center for International Business Cycle Research, under the direction of Dr. Geoffrey H. Moore, and the former U.S. Bureau of Mines developed the metal industry leading and coincident indexes in the early 1990's. Customers can send mail concerning the *Metal Industry Indicators* to the following address:

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[1]**Business Cycle Indicators, A monthly report from The Conference Board** (March 1996).